Proposal/Scope of Work

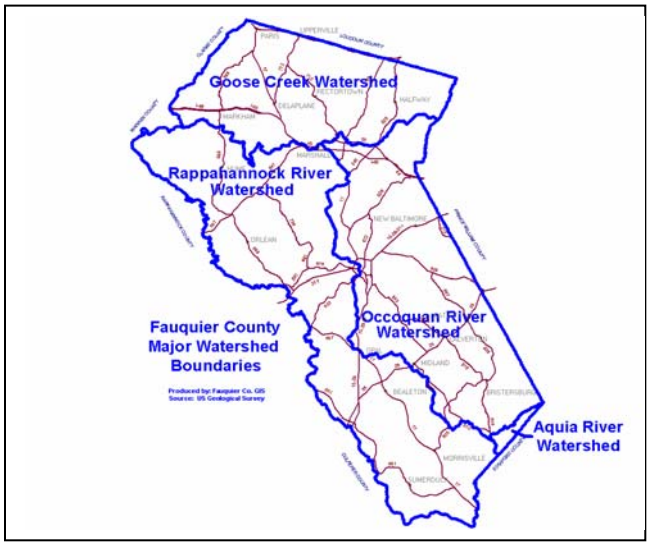
Project Description

This is a grant application to the *Virginia Water Quality Improvement Fund's* Cooperative Non-point Source Pollution Program with Local Governments. The grant focuses on creating a program that results in permanent protection of riparian buffers along tributaries, wetlands, and water bodies with perennial flow throughout urban, suburban and mixed open areas.

Overview

Fauquier County believes a Riparian Buffer Easement Program to be a key component in its Tributary Strategies Implementation Plan. By developing and implementing a successful easement program many of the 2010 BMP goals outlined in the 2005 Tributary Strategies Input Deck would be targeted. Forested buffers, grass buffers, non-urban stream restoration, urban stream restoration, and tree plantings are a few of the Tributary Strategy BMP techniques that would be implemented by riparian buffers. Therefore, Fauquier County respectfully requests $96,271 annually for four years to create a countywide, self-sustaining Riparian Buffer Easement Program.

Background



Fauquier County's 660 square miles serves as the headwaters to the Potomac and Rappahannock Rivers and its land mass makes up almost a third of the Occoquan Watershed. In addition the providing the drinking water supply to its own residents, Fauquier County's practices impact the watersheds and drinking water supplies of major communities downstream, as well as the overall health of the Chesapeake Bay. Like many of its neighbors, Fauquier County is experiencing intense growth pressures. Since 2000, the county has outpaced its goal of an annual 1% growth rate by growing at 2.89%.

Without acting quickly many of the possible riparian buffer easements, which would serve to implement Tributary Strategies and TMDL state plans, will be lost to development forever.

Fauquier's unique position as a developing headwaters community makes it a valuable community for DCR to implement non-point source pollution reductions. Several hydrologic units of concern (A04, A05, A08, A17-19, A21, A27, E01, E02, E08, E10) will be

subject to this Riparian Buffer Easement Program with a monitoring component to demonstrate nutrient reductions over time.

Fauquier County's interest in a Riparian Buffer Easement Program is not new. Over a year ago, the County worked with University of Virginia's Institute of Environmental Negotiation to launch a pilot project for IEN's Virginia Solutions. The project allowed Fauquier County to undertake an innovative series of facilitated meetings between key stakeholders on the topic of developing a countywide Riparian Buffer Easement Program. State, regional, and local agencies, as well as advocacy groups, participated in the four month process. These unprecedented meetings brought together experts from all over the state to discuss how a Riparian Buffer Easement Program would benefit not only Fauquier County but also its downstream neighbors. Program structure and issues were identified, Tributary Strategy and TMDL implementation plans were discussed, and next steps were developed. This effort cumulated in a Declaration of Cooperation (Attachment A) in which each group signed a pledge to continue moving forward with the development of a countywide, self-sustaining Riparian Buffer Easement Program.

Program Structure

The proposed Riparian Buffer Easement Program was discussed in great detail by the group of key stakeholders over four months. The group agreed that the program should be implemented countywide through three avenues: voluntary easements, development driven easements, and eventually point source to non-point source nutrient trading credit easements.

The voluntary easements would be targeted through the County's partnerships with John Marshall Soil and Water Conservation District, the Virginia Outdoors Foundation, and other land trusts.

The development driven easements would focus on acquiring riparian buffer easements through the County's land use application process. Fauquier County would look at methods to require, either through regulation or proffers, permanent easements on streams impacted by development projects. In addition, some counties are using riparian buffers to meet storm water management requirements.

The last easement technique is tied to the state's nutrient cap to be administered by the Department of Environmental Quality (DEQ). By 2010, Virginia intends to allow point source pollutants to "buy" credits from non-point source areas for nutrient trading. Fauquier County believes this is an opportunity to have its downstream neighbors buy riparian easements on its headwaters for permanent protection.

While each of these easement techniques sound fairly straight-forward in nature, in reality it will take a full time staff person working with many partners to establish a successful program. The ten pages of issues were identified in the key stakeholders group will need to be worked through and resolved before implementation. A sampling of issues includes:

- How will the riparian easements be defined?
- Who will co-hold them with the County?
- Who will monitor them over time?
- How will they be legally enforced?
- What will the educational outreach look like?
- How will they be funded?
- How will the funding be protected from political fads?
- What will be the nutrient and sediment baseline?
- How will the many partners be coordinated?

It quickly became apparent to the participants of the meetings that creating a successful Riparian Buffer Easement Program will take a lot of resources, time, and coordination.

Grant Request

The DCR grant cycle provides an opportunity to capitalize on the momentum established by the key stakeholders meetings on the Riparian Buffer Easement Program. Fauquier County proposes to create a program that would result in permanent protection of riparian buffers and thereby reduce nutrient and sediment loads on the Chesapeake Bay as the key to implementing Tributary Strategies.

In order to achieve this, Fauquier County requests funding for a full time staff position and the costs associated with supporting water quality monitoring. The grant request is matched with in-kind hours detailed in the Budget Narrative.

If funded, the Riparian Buffer Easement program would spend the first year developing the program; resolving all the outstanding issues; cultivating and maintaining partnerships; and creating a nutrient load baseline. Year Two of the grant would likely result in 20% (12,000 linear feet) being placed under easement. Years Three and Four would collect 40% (24,000 linear feet) each for a total of approximately 60,000 linear feet. With a conservative minimum 35 feet setback (100 feet may be more realistic), this translates to 50 acres of protected riparian buffers.

Water Quality Improvements

The Department of Conservation and Recreation's Tributary Strategy Input Deck (Attachment B) for Fauquier County focuses prominently on riparian buffers. It is well documented that riparian buffer easements provide environmental benefits. Depending upon the width and complexity of the buffer, 50–100% of the sediments and the nutrients attached to them can settle out and be absorbed as buffer plants slow sediment-laden runoff waters. Wider, forested buffers are even more effective than narrow, grassy buffers. For example, a 100-foot wide riparian strip of forest and grass can reduce sediment by 97 percent, nitrogen by 80 percent and phosphorus by 77 percent. This directly contributes to the Tributary Strategy Implementation Plan goals.

The 1998 Virginia Department of Forestry Riparian Buffer Implementation Plan states that studies show buffers are extremely effective in preventing pollutants from reaching streams. Reasonably sized, properly developed and managed riparian buffers are estimated to be nearly 70 to almost 100 percent effective at filtering nutrients and sediment and from runoff.

Table 1 - The Effect of Different Size Buffer Zones on Potential Reductions of Sediment and Nutrients from Field Surface Runoff

(from "Lowrance et al", 1995) 1 Percent reduction = 100 x (Input - Output)/Input

Buffer Width (ft.)	Buffer Type	Sediment Reduction 1%	Nitrogen Reduction 1%	Phosphorus 1%
15	Grass	61.0	4.0	28.5
30	Grass	74.6	22.7	24.2
62	Forest	89.8	74.3	70.0
75	Forest/Grass	96.0	75.3	78.5
95	Forest/Grass	97.4	80.1	77.2

Secondary to the Tributary Strategy goals, but still important, are the positive impacts riparian buffer easements have on fish and wildlife habitats, aquatic habitats, recreation and aesthetics, stream bank stabilization, stream bed stabilization, and stream flow regulation.

It is important that Fauquier County and Virginia demonstrate how riparian buffer easements reduce non-point source pollution. Therefore, to support the primary work of the Riparian Buffer Easement Program Fauquier County proposes to implement a comprehensive water quality monitoring program which would exhibit the environmental benefits of riparian easements and their effectiveness in reducing non-point source pollution entering the tributaries of Chesapeake Bay. Specifically, this program will focus on the nutrient reductions achieved through riparian buffers under easement on a micro level, or farm level, and the relationship between farm level buffers and improvements in water quality on a larger watershed level. With the help of volunteer monitors, this will be accomplished by two monitoring strategies.

The first part of this monitoring program will be implemented on several farms in the county where livestock are currently accessing surface waters. The monitoring of standard water quality parameters will be conducted six months to a year ahead of livestock exclusion practices. This will establish a good record of existing water quality conditions. The areas of livestock access will then be protected and alternative water systems established for the livestock. The riparian areas associated with these practices will then be placed under easement and monitoring will continue in the hope of capturing

any changes in water quality parameters over time. The project will strive to correlate the installation of riparian easements with a potentially tradable nutrient reduction value that may be used in any future nutrient trading program developed in the state.

The second part of this effort will be to monitor water quality parameters on a watershed level (i.e. A05, VA hydrologic unit system) to demonstrate the cumulative effect of riparian easements and other best management practices accomplished in the respective watersheds. This monitoring will not only add insight into the characteristics of nutrients in surface water and the cumulative effectiveness of BMPs on a watershed level, it will provide needed supportive data in our efforts to meet the goals of the Tributary Strategies and TMDLS.

Water quality monitoring on both fronts will consist of chemical, physical and biological parameters so that the information gained will be applicable to many of the conservation efforts currently underway on the local, state and federal levels.

Education and Outreach Components

The outreach of the proposed Riparian Buffer Easement Program began with the key stakeholder meetings held in 2005. State, regional, and local agencies were educated on the many benefits such a program would generate. Each agency came to understand the respective roles they might play in helping make a Riparian Buffer Easement Program effective. Many who attended these meetings brought with them specific expertise to give the proposed program a vibrant and comprehensive outline.

Local advocacy groups were also included in the key stakeholder meetings. The Farm Bureau, Piedmont Environmental Council, Citizens for Fauquier County, and Goose Creek Association all actively contributed to the development of ideas and issues.

It is anticipated by the County and the members of the key stakeholders that this group will continue in an advisory function as the Riparian Buffer Easement Program details are resolved and fully implemented. The group will also likely be expanded to include experts in key areas of concern. Technical expertise will be needed in legal, environmental, and educational arenas.

Once the program is operational the local advocacy groups will be instrumental in helping educate the greater community through public meetings, newsletters, and websites.

Conclusion

Fauquier County believes that a Riparian Buffer Easement Program is the key to implementing its Tributary Strategies and would welcome the opportunity to partner with the Commonwealth of Virginia in this endeavor.